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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,975	10/07/2003	Joachim Laurenz Naimer	UNI1773-007	4775
8698	7590	07/14/2005	EXAMINER	
STANLEY LAW GROUP LLP 495 METRO PLACE SOUTH SUITE 210 DUBLIN, OH 43017			TRAN, DALENA	
			ART UNIT	PAPER NUMBER
			3661	

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/679,975	NAIMER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Dalena Tran	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 22 April 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-7,9-13,15-21,23-25 and 27-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-7,9-13,15-21,23-25 and 27-31 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

**Notice to Applicant(s)**

1. This office action is responsive to the amendment filed on 4/22/05. As per request, claims 1, 9, 20-21, and 28-31 have been amended. Claims 8, 14, 22, and 26 have been cancelled. Thus, claims 1-7, 9-13, 15-21, 23-25, and 27-31 are pending.
2. Figure drawings (1-3) are objected to for the reasons indicated by the Draftperson (see PTO-948). Corrected drawings are required.
3. In response to the remarks in the "claims status and preliminary comments" page 7 of the amendment, the two US applications (2003/0132860, and 2004/0113816) still can be used as the prior arts because the date of their provisional applications and the filling date are prior to the current application.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. Claims 1-2, 5-7, 9-10, and 20-21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Maris (US 2004/0113816 A1) in view of Etherington (5,844,504), and Horvath et al. (6,473,003).

As per claim 1, Maris discloses an electronic display for presenting data from a vertical speed source aboard an aircraft, wherein display comprises: a fractional section of a vertical speed indicator scale (see [0016] through [0023]; and [0046] through [0049]), a vertical speed

Art Unit: 3661

indicator marker (see [0050] through [0058]), wherein fractional section has non-linear graduations marked thereon in the vicinity of vertical speed indicator marker (see [0117] through [0123]). Maris does not disclose an arcuate vertical speed indicator scale. However, it is well known in the art that vertical speed indicator scale is one of the indicator scales in the primary flight display in the cockpit of an aircraft, which also included an altimeter indicator, and an airspeed indicator. Also, it would have been well known in the art that avionics display engineers have attempted to enhance the display of information to pilots, so to enhance the pilot's efficiencies, such as to modify the difference shapes of indicator scales, for example, from a basic configurations vertically oriented display scale, and a circular shape to an arcuate shape display of indicator scales as Etherington disclose in column 1, lines 33-45; column 2, lines 34-53; and column 4, lines 18-36.

Also, to modify for the teach of Maris, about the arcuate scale display in a cockpit display. Horvath et al. disclose a cockpit display of traffic information, such as altitude, heading, and identification of target aircrafts (column 1, lines 16-21). The cockpit display has a control panel provides a user interface to enable a pilot to control a graphic displayed on the screen (columns 4-5, lines 34-2), such as a range indicator to provide a range ring display a complete circle if the display is a full 360 degrees, or an arc if the display shows only the forward arcuate area (column 1, lines 53-56; and column 5, lines 3-29). Also, Horvath et al. disclose the system may be programmed to cause the range ring to float at any prescribed position on the screen (column 6, lines 17-19). Therefore, an arcuate shape of a range indicator has been disclosed in Horvath et al., and a display of information such as altitude, and heading also implies an

altimeter indicator, an airspeed indicator, or a vertical speed indicator display can be included in a cockpit display.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Maris by combining an arcuate indicator scale of a vertical indicator to provide enhanced, intuitive readability while saving more space in the cockpit display, and to provide range indicator modification to help pilot track the actions and the status of nearby aircraft and his own aircraft to ensure safety.

As per claim 2, Maris does not disclose vertical speed indicator scale is elliptically shaped. However, Etherington discloses in figure 4, an arcuate shape top and bottom in a horizontal direction. Also, as discussed above, Horvath et al. disclose the system may be programmed to cause the range ring to float at any prescribed position on the screen (column 6, lines 17-19), and the range ring can be an arc if the display shows only the forward arcuate area (column 1, lines 55-56). The range ring can be modified to float at any prescribed position on the screen, this implies the arc can be in horizontal or vertical position, and therefore, it is obvious to one of ordinary skill in the art that when the arc in the vertical position, it represent an elliptically shaped. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Maris by combining vertical speed indicator scale is elliptically shaped to provide to the pilot a different view of information display in the scale display, so the pilot can adjust his or her perception to monitoring the orientation, heading, or the altitude of his own aircraft and also compare with other aircrafts.

As per claims 5-7, Maris discloses vertical speed indicator marker is comprised of a pointer and a numeric display (see [0092] through [0106]).

As per claims 9-10, Etherington discloses fractional section of vertical speed indicator scale always shows an indicia for a value of zero vertical speed, and vertical speed indicator marker is comprised of a digital readout of the vertical speed of aircraft (see column 3, lines 18-37).

As per claim 20, Maris discloses an electronic display for presenting data from a vertical speed source aboard an aircraft, wherein display comprises: a fractional section of a vertical speed indicator scale, wherein fractional section of a vertical speed indicator scale shown by electronic display will change relative to the vertical speed depicted by vertical speed indicator marker (see [0016] through [0023]; and [0046] through [0049]), a vertical speed indicator marker showing a vertical speed of the aircraft as indicated by the vertical speed source (see [0050] through [0058]), wherein vertical speed indicator marker comprises a pointer and a digital numeric display (see [0050] through [0058]; and [0129] through [0138]), wherein fractional section of a vertical speed indicator scale shows non-linear graduations marked thereon in the vicinity of vertical speed indicator marker (see the abstract; [0059] through [0070]; and [0117] through [0123]). Maris does not disclose vertical speed indicator scale is elliptically shaped. However, Etherington discloses in figure 4, an arcuate shape top and bottom in a horizontal direction. Also, as discussed above, Horvath et al. disclose the system may be programmed to cause the range ring to float at any prescribed position on the screen (column 6, lines 17-19), and the range ring can be an arc if the display shows only the forward arcuate area (column 1, lines 55-56). The range ring can be modified to float at any prescribed position on the screen, this implies the arc can be in horizontal or vertical position, and therefore, it is obvious to one of ordinary skill in the art that when the arc in the vertical position, it represent an elliptically

Art Unit: 3661

shaped. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Maris by combining vertical speed indicator scale is elliptically shaped to provide to the pilot a different view of information display in the scale display, so the pilot can adjust his or her perception to monitoring the orientation, heading, or the altitude of his own aircraft and also compare with other aircrafts.

As per claim 21, Maris discloses vertical speed indicator marker is shown equidistant between an upper and lower value on fractional section of vertical speed scale (see [0050] through [0058]).

6. Claims 3, 11, and 23, are rejected under 35 U.S.C.103(a) as being unpatentable over Maris (US 2004/0113816 A1), Etherington (5,844,504), and Horvath et al. (6,473,003) as applied to claims 1 and 20 above, and further in view of Gordon et al. (6,686,851).

As per claim 3, Maris, Etherington, and Horvath et al. do not disclose vertical speed indicator marker shows a vertical speed trend. However, Gordon et al. disclose vertical speed indicator marker shows a vertical speed trend (see columns 5-6, lines 41-10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Maris, Etherington, and Horvath et al. by combining vertical speed indicator marker shows a vertical speed trend to help the pilot continue to observe an altitude and position information in order for the pilot decide to monitor or adjust a current speed or altitude for increasing a safety for the aircraft.

As per claims 11, and 23, Maris, Etherington, and Horvath et al. do not disclose the vertical speed is bounded by the range of +-9999 FPM. However, Gordon et al. disclose a scale range of 9500 feet to 11000 feet (see columns 3-4, lines 60-42). Therefore, it is obvious that

9999 feet is included in (9500-11000 ft range), also it is well known that a vertical speed scale can be designed to include vary different ranges to indicate a higher speed display value for the aircraft when the aircraft is in the higher rate of altitude. It would have been obvious to one of ordinary skill in the art at the time the invention to implement the system of Maris, Etherington, and Horvath et al. by combining vertical speed is bounded by the range of +-9999 FPM to enhance a pilot's awareness of a maximum altitude levels, therefore to alert the pilot to an unsafe or unintended flight patterns.

7. Claims 4, 12-13, 15, 24-25, and 27, are rejected under 35 U.S.C.103(a) as being unpatentable over Maris (US 2004/0113816 A1), Etherington (5,844,504), and Horvath et al. (6,473,003) as applied to claims 1 and 20 above, and further in view of McElreath et al. (6,154,151).

As per claim 4, Maris, Etherington, and Horvath et al. do not disclose vertical speed indicator marker shows a vertical speed trend by its motion to replicate the motion of an analog instrument. However, McElreath et al. disclose vertical speed indicator marker shows a vertical speed trend by its motion to replicate the motion of an analog instrument (see column 4, lines 4-14; and column 5, lines 48-58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Maris, Etherington, and Horvath et al. by combining vertical speed indicator marker shows a vertical speed trend by its motion to replicate the motion of an analog instrument to continuous update vertical speed indicator for viewing by the pilot.

Also, as per claims 12, and 24, Maris, and Etherington do not disclose TCAS resolution advisory along a periphery of vertical speed indicator scale. However, McElreath et al. disclose

TCAS resolution advisory indicators along a periphery of vertical speed indicator scale wherein TCAS resolution advisory indicators are shown during a TCAS resolution advisory condition (see the abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Maris, Etherington, by combining TCAS resolution advisory to alert pilot about potentially hazardous aircraft targets in the area to avoid collision and assure safety to the aircraft.

As per claims 15, and 27, McElreath et al. also disclose TCAS resolution advisory indicators are comprised of red marks and green marks (see at least columns 6-7, lines 46-34).

As per claims 13, and 25, Horvath et al. disclose TCAS resolution advisory condition triggers an increase in size of electronic display (see columns 6-7, lines 35-31).

8. Claims 16-17, are rejected under 35 U.S.C.103(a) as being unpatentable over Maris (US 2004/0113816 A1), Etherington (5,844,504), and Horvath et al. (6,473,003) as applied to claim 1 above, and further in view of Staggs et al. (6,685,541).

As per claims 16-17, Maris, Etherington, and Horvath et al. do not disclose a vertical speed bug having a shaped indicator in a position inside of fractional section of vertical speed indicator scale. However, Staggs et al. disclose a vertical speed bug having a shaped indicator in a position inside of fractional section of vertical speed indicator scale, wherein vertical speed bug indicates a selected vertical speed value, and vertical speed bug points to a location on fractional section of vertical speed indicator scale equivalent to selected vertical speed value (see column 13, lines 8-56). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Maris, Etherington, and Horvath et al. by combining a vertical speed bug having a shaped indicator in a position inside of fractional section of vertical

speed indicator scale so the pilot can see right away a mark where to read out a current vertical speed of the flight position with a quick glance to the display panel.

9. Claims 18-19, are rejected under 35 U.S.C.103(a) as being unpatentable over Maris (US 2004/0113816 A1), Etherington (5,844,504), Horvath et al. (6,473,003), and Staggs et al. (6,685,541) as applied to claim 16 above, and further in view of Fisher (5,739,771), and Feyereisen et al. (US 2003/0132860 A1).

As per claims 18-19, Maris, Etherington, Horvath et al., and Staggs et al. do not disclose vertical speed bug points to a location on an edge of fractional section of vertical speed indicator scale. However, Fisher disclose vertical speed bug points to a location on an edge of fractional section of vertical speed indicator scale when selected vertical speed value is outside the range of values shown by fractional section of vertical speed indicator scale (see the abstract; columns 2-3, lines 45-40; and columns 4-5, lines 30-46). Maris, Etherington, Horvath et al., and Staggs et al. also do not disclose shaped indicator of vertical speed bug changes. However, Feyereisen et al. disclose shaped indicator of vertical speed bug changes to provide a visual cue, and it is obvious that the shape can change to different rate of its original shape (see [0063] through [0067]; and [0112] through [0116]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Maris, Etherington, Horvath et al., and Staggs et al. by combining vertical speed bug points to a location on an edge of fractional section of vertical speed indicator scale when selected vertical speed value is outside the range of values shown by fractional section of vertical speed indicator scale to indicate to the operator of an aircraft that a set-point of an indicator is outside of the predetermined range, so the operator can interpret flight path and respond to displayed information quickly and accurately to ensure

Art Unit: 3661

safety of the aircraft. Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Maris, Etherington, Horvath et al., and Staggs et al. by combining shaped indicator of vertical speed bug changes to different rate of its original shape for providing attention to the pilot depend on the level of warning.

10. Claims 28-29, are rejected under 35 U.S.C.103(a) as being unpatentable over Maris (US 2004/0113816 A1), Etherington (5,844,504), and Horvath et al. (6,473,003), as applied to claim 20 above, and further in view of Fisher (5,739,771), and Gralnick (4,914,733).

As per claims 28-29, Maris, Etherington, and Horvath et al., do not disclose vertical speed indicator marker is shown parked at the edge of fractional section of vertical speed scale. However, Fisher discloses vertical speed indicator marker is shown parked at the edge of fractional section of vertical speed scale (see the abstract; columns 2-3, lines 45-40; and columns 4-5, lines 30-46). Fisher does not disclose a range of vertical speed is +/- 6000fpm. However, it is well known in the art that a maximum indicia of a vertical speed scale range can be up to +/- 6000fpm as disclosed in Gralnick (column 6, lines 23-57). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Maris, Etherington, Horvath et al., and Staggs et al. by combining vertical speed bug points to a location on an edge of fractional section of vertical speed indicator scale when selected vertical speed value is outside the range of values shown by fractional section of vertical speed indicator scale (for example +/- 6000fpm) to indicate to the operator of an aircraft that a set-point of an indicator is outside of the predetermined range, so the operator can interpret flight path and respond to displayed information quickly and accurately to ensure safety for the aircraft.

11. Claims 30-31, are rejected under 35 U.S.C.103(a) as being unpatentable over Maris (US 2004/0113816 A1), Etherington (5,844,504), Horvath et al. (6,473,003), Fisher (5,739,771), and Gralnick (4,914,733) as applied to claim 28 above, and further in view of Gordon et al. (6,686,851).

As per claim 30, Maris, Etherington, Horvath et al., Fisher, and Gralnick do not disclose the vertical speed is bounded by the range of +-9999 FPM. However, Gordon et al. disclose a scale range of 9500 feet to 11000 feet (see columns 3-4, lines 60-42). Therefore, it is obvious that 9999 feet is included in (9500-11000 ft range), also it is well known that a vertical speed scale can be designed to include vary different ranges to indicate a higher speed display value for the aircraft when the aircraft is in the higher rate of altitude. It would have been obvious to one of ordinary skill in the art at the time the invention to implement the system of Maris, Etherington, Horvath et al., Fisher, and Gralnick by combining vertical speed is bounded by the range of +-9999 FPM to enhance a pilot's awareness of a maximum altitude levels, therefore to alert the pilot to an unsafe or unintended flight patterns.

As per claim 31, Etherington discloses fractional section of vertical speed scale shows an indicium for zero fpm (see column 3, lines 18-36).

### **Remarks**

12. Applicant's argument filed on 4/22/05 has been fully considered. The new ground of rejection as above as the result of the new amended claims.

Art Unit: 3661

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136 (a).

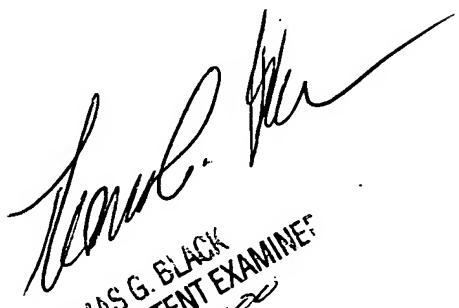
A shorten statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE MONTHS shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136 (a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 571-272-6968. The examiner can normally be reached on M-F (6:30 AM-4:00 PM), off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The new fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 (effective on July 15, 2005).

Art Unit: 3661

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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/dt

July 8, 2005